

Notice of Allowability

Application No.

10/037,727

Examiner

Denise Tran

Applicant(s)

MARTIN ET AL.

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/27/04 and telecommunications on 12/6/04 and 12/2/04.
2. ☒ The allowed claim(s) is/are 1-16 and 24-39.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 120604.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 3/4/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 12/6/04
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other drawing changes.



EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Keith Baxter on 12/6/04.

2. The application has been amended as follows:

In the claims:

Please, amend the claims as stated in the attachment.

3. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: figs. 1-4 and 8 boxes have been labeled as shown in the proposed corrected drawings. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

4. The following is an examiner's statement of reasons for allowance: none of the prior of record shows the combination of selection means for choosing one of the snooping means and directory means for the communication of a given cache coherency message based on an evaluation of available bandwidth of a network used

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to communicate the cache coherence messages determined by the evaluation means and the other limitations of claim 24.

None of the prior of record shows for a given cache coherence message, selecting the mechanism for communications of cache coherence messages directly from a given processor unit to another processor unit or the mechanism for communication of cache coherence messages directly from a given processor unit to a directory and then to at least on other processor unit when indicated by the directory based on an evaluation of an available bandwidth on an network used to communicated the cache coherence messages in combine with the other limitations of claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. ***Election/Restrictions***

6. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-16 and 24-39, drawn to select one of communications of cache coherence message based on an evaluation the available bandwidth on a network used to communicate the cache coherence message and a directory initiates a retransmission of cache coherence message, classified in classes 709, subclass 230 and 224;

- II. Claims 17-23 and 40-46, drawn to upon a detected insufficiency, a directory retries a multicast transmission of a cache coherency message, classified in class 714, subclass 746.

7. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the apparatus of invention I could be operated with a retransmission using broadcasting or snooping. The subcombination has separate utility such as in a system lacks of selecting one of communications of cache coherence message based on an evaluation the available bandwidth on a network used to communicate the cache coherence message.

8. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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9. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

10. During a telephone conversation with Keith Baxter on 12/2/04 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-16 and 24-39. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-23 and 40-46 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

11. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Scott et al., "Performance of Pruning-cache Directories for Large Scale Multiprocessors" 1993, pp 520-534.

b) Arimilli et al. (U.S. 6535957) shows selecting an order of data transferring based on system bus utilization;

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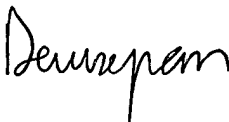
c) Weber (US 2001/0013089 A1) shows the use of snoopy protocol and directory protocol;

d) Tarui (US 6510496) shows a snoop command multicast to nodes in a partition.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise Tran whose telephone number is (703) 305-9823. The examiner can normally be reached on Monday, Tuesday, and alternated Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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12/9/04